PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

United States Patent and Trademark Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 18 January 1999 (18.01.99)	
International application No. PCT/IL98/00255	**Applicant's or agent's file reference** Y/97-40 PCT
International filing date (day/month/year) 01 June 1998 (01.06.98)	**Priority date** (day/month/year) 05 June 1997 (05.06.97)
Applicant WALLACH, David et al	

1. The designated Office is hereby notified of its election made:

   [X] in the demand filed with the International Preliminary Examining Authority on:

   20 December 1998 (20.12.98)

   [ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

   [ ] was not

   made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
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Authorized officer

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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Y/97-40 PCT	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IL98/00255	International filing date *(day/month/year)* 01/06/1998	Priority date *(day/month/year)* 05/06/1997

International Patent Classification (IPC) or national classification and IPC
C12N15/12

Applicant
YEDA RESEARCH AND DEVELOPMENT CO. LTD. et al.

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the report
   II ☐ Priority
   III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   IV ☒ Lack of unity of invention
   V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   VI ☐ Certain documents cited
   VII ☐ Certain defects in the international application
   VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
20/12/1998	31.08.99
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Roscoe, R Telephone No (+49-89) 2399 2554

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL98/00255

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-72 as originally filed

Claims, No.:

1-39 as originally filed

Drawings, sheets:

1/8-8/8 as originally filed

2. The amendments have resulted in the cancellation of:

☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☒ the entire international application.

☐ claims Nos. .

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 39(part).

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

   ☐ restricted the claims.

   ☐ paid additional fees.

   ☐ paid additional fees under protest.

   ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

   ☐ complied with.

   ☒ not complied with for the following reasons:

   see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

   ☐ all parts.

   ☒ the parts relating to claims Nos. 1-38, 39 (part).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL98/00255

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

1. Citations

The documents mentioned in the present International Preliminary Examination Report are numbered as in the search report, i.e. D1 corresponds to the first document of the search report etc.

The priority document pertaining to the present application was not available at the time of establishing this first written opinion. Hence, the current assessment is based on the assumption that all claims enjoy priority rights from the filing date of the priority document. If it later turns out that this assumption is incorrect, document D4 cited in the search report could become relevant to the assessment of whether the present application satisfies the criteria set forth in Article 33(1) PCT.

2. No Opinion (Section III)

The present application is absolutely unexaminable for a number of reasons.

(i) The claims relating to DNA sequences (claims 1-4) and proteins (9-10) are particularly critical for the assessment of the claims as a whole. These claims have a totally unclear and unjustifiable scope. Firstly, the term "B1 protein" appears to be an arbitrary definition not known to the skilled person at the time of the invention. B1 can and must be defined via the sequence of Fig.3. The sequence of B1 is the essence of the invention (i.e. the solution to the problem which applicant has solved). Any claim falling short of including the sequence would have to be considered as a definition by the result to be achieved (which formulation is inadmissible).

(ii) Claim 1 encompasses analogs of B1. The functional definition of B1, which the analog would clearly have to fall under is worded so broadly that a large number of prior art proteins fall within the definition. Applicant himself mentions that BAD may act analogously to B1 (p.20, l.2-3). Hence, in this respect, claim 1 is clearly not novel. Further, analogs do not necessarily share structural features with the B1 protein and can thus not be considered to belong to the same invention either.

(iii) The number of independent claims is vastly excessive (i.e. 28), and many of these claims relate to a variety of embodiments which cannot be considered related to eachother (see e.g. the variety of different types of compound which can be found in the pharmaceutical composition of claim 25).

2.1 **Preliminary** statement on Novelty, Inventive Step and Industrial Applicability

Novelty (Art.33(2) PCT)

In principle, all claims relating specifically to a technically defined B1 protein or DNA encoding therefore appear to be novel.

Novelty cannot be acknowledged for claim 12. Even antibodies that are specific for B1 may be known, yet particularly when derivatives are included - these could comprise any known epitope. As a result, claim 16 is also affected.

Novelty cannot be acknowledged for claims relating to unspecified modulators of B1 or their uses. It is probable that known compounds can act as modulators (i.e. molecules capable of disrupting the direct or indirect interaction of the B1 protein (claims 25, 26, 28) / molecules capable of interfering with the protein kinase activity of B1 (claim 27)) thereof. Broad spectrum kinase inhibitors are also known.

Inventive Step (Art.33(3) PCT)

The problem solved by the applicant was to find another cellular inhibitor of apoptosis. Applicant screened a cDNA library for molecules displaying similarity to c-IAP, found a similar cDNA fragment and obtained a complete cDNA himself. Some characteristics of B1 protein were then established. Although the approach used has to be considered technically trivial, the prior art does not suggest the existence of the solution provided by the applicant, nor does it specifically suggest performing the screening process performed by the applicant. Hence, on the basis of the cited prior art, inventive step has to be acknowledged.

Industrial Applicability (Art.33(4) PCT)

For the assessment of the present claims 13-19, 28-30 and 39 on the question

whether they are industrially applicable, no unified criteria exist in the PCT. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

3. **Section IV (Unity)**

Claim 39 (partially) cannot be examined as no search report was established for this claim since it related to a different invention (The Authorized Authority (Examination) agrees entirely with the argumentation in form PCT/ISA/206(extra sheet) in this respect).

4. **Section VIII (Clarity)**

Moderate stringency conditions are undefined (claim 2(c)). Furthermore, a DNA sequence hybridizing to a coding sequence cannot strictly speaking encode the same protein (i.e. it would be the non-coding strand)

The use of the terminology "derivatives thereof" in claim 9 renders the scope of said, and a number of the following, claim(s) unclear. The definition is effectively an indefinite product by process one - the nature of the end product not being technically defined. Claim 22 also is unclear (and thus effectively lacking novelty) due to the use of the term "derivatives". Same applies to claim 30.

The statement in claim 10 "have at least part of the amino acid sequence" has no limiting effect since the protein in question could share a single amino acid with the protein to which it is being compared.

Claim 15 does not define a virus (claim 18)

The terminology "A pharmaceutical composition is one..." is inappropriate claim language (claims 25, 27).